DETAILED ACTION

Response to Amendment

1. The declaration under 37 CFR 1.132 filed 01/24/2011 is insufficient to overcome the rejection of claims 1, 3, and 5-9 based upon Nakamura in view of Takao as set forth in the last Office action because: The declaration argues unexpected results from using a chelate compound as opposed to a compound containing isocyanate groups. The data presented for unexpected results is not commensurate with the scope of independent claim 1 as independent claim 1 teaches against any one isocyanate group and the use of any chelate compound. The evidence offered is a comparison of one specific multi-functional isocyanate to one specific chelate compound. The two single examples do not present unexpected results for the entire invention encompassed by the breadth of the independent claim. In re Lindner, 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972) (Evidence of nonobviousness consisted of comparing a single composition within the broad scope of the claims with the prior art. The court did not find the evidence sufficient to rebut the prima facie case of obviousness because there was "no adequate basis for reasonably concluding that the great number and variety of compositions included in the claims would behave in the same manner as the tested composition.") At the very least a trend must be demonstrated that would allow an artisan to extend the probative value thereof. With regards to applicant's arguments with respect to the inclusion of a catalyst, the claims do not prevent the inclusion of a catalyst in the product.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 3, 5-9, and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (PN 6245182) in view of Takao et al. (PN 5705451).

a. With regards to claim 1, Nakamura teaches an active energy ray curable resin composition which comprises a polymer having a methacryl equivalent weight of from 100 to 300 g/eq, a hydroxyl value of from 20 to 500, and a weight average molecular weight of 5,000 to 50,000. Nakamura more specifically teaches that the methacryl polymer is glycidyl methacrylate which is known by one of the ordinary skill in the art to comprise epoxy groups (col 3 ln 34-52). Nakamura teaches a reaction product obtained by poly-addition of glycidyl methacrylate based polymer and alpha, beta unsaturated monocarboxylic acid (the polymer is the reaction product of the addition of a monocarboxylic acid

having an unsaturated double bond to a polymer having an epoxy group) (col 3 ln 49-52). Nakamura teaches the inclusion of a polyfunctional isocyanate (heat curing agent) for the purposes of partially crosslinking the material due to the reaction of the hydroxyl compounds with the crosslinking agent (col 8 ln 1-11).

b. Takao teaches an image transfer medium in which a thermoplastic resin with a functional group and an isocyanate or chelate compound are used (abstract). Takao teaches the reaction of a hydroxyl functional group with either an isocyanate or chelate compound for crosslinking (col 5 ln 55 – col 6 ln 10, col 7 ln 10-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use chelate compounds in place of isocyanate in the process of Nakamura as taught by Takao as the equivalence of the compounds presents a reasonable expectation of success and would have been obvious to one of ordinary skill in the art through routine experimentation.

c. With regards to claim 3, Nakamura teaches that the glycidyl methacrylate based polymer may be a homopolymer of glycidyl methacrylate or a copolymer of glycidyl methacrylate (col 3 ln 53-56).

d. With regards to claim 5, Nakamura teaches using a photopolymerization initiator (col 8 ln 60-62).

e. With regards to claims 6 and 7, Nakamura teaches of a transfer material comprising a protective layer on a releasable sheet (col 3 ln 30-46, col 4 ln 14-27).

f. With regards to claim 8, Nakamura teaches a method for producing a molded article comprising the steps of (col 3 ln 62-64, col 4 ln 14-23).

i. Adhering transfer material onto a substrate of a molded article (col 3 ln 64-67);

ii. Releasing the substrate sheet (removing the releasable base sheet) (col 4 ln 1)

iii. Irradiating with an active energy ray (irradiating the surface of the molded article with an active energy ray) (col 4 ln 2).

g. With regards to claim 9, Nakamura et al. teaches a method of producing a molded article comprising the steps of (col 4 ln 3-6)

iv. Placing a transfer material in a mold (applying a transfer material to the inside of a mold) (col 4 ln 7-8).

v. Injecting a resin into a cavity for filling, molding, and simultaneously adhering the transfer material to the surface of the molded resin (filling a cavity of the mold with a resin by injection to thereby form a molded article and adhering the transfer material to a surface of the molded article) (col 4 ln 8-11);

vi. Releasing the substrate sheet (removing the releasable base sheet) (col 4 ln 12)

vii. Irradiating with an active energy ray (irradiating the surface of the molded article with an active energy ray) (col 4 ln 13).

h. With regards to claim 11, Nakamura teaches an active energy ray curable resin composition which comprises a polymer having a methacryl equivalent weight of from 100 to 300 g/eq, a hydroxyl value of from 20 to 500, and a weight average molecular weight of 5,000 to 50,000. Nakamura more specifically teaches that the methacryl polymer is glycidyl methacrylate which is known by one of the ordinary skill in the art to comprise epoxy groups (col 3 ln 34-52). Nakamura teaches a reaction product obtained by poly-addition of glycidyl methacrylate based polymer and alpha, beta unsaturated monocarboxylic acid (the polymer is the reaction product of the addition of a monocarboxylic acid having an unsaturated double bond to a polymer having an epoxy group) (col 3 ln 49-52). Nakamura teaches the inclusion of a polyfunctional isocyanate (heat curing agent) for the purposes of partially crosslinking the material due to the reaction of the hydroxyl compounds with the crosslinking agent (col 8 ln 1-11). Nakamura teaches the inclusion of a photopolymerization initiator (col 8 ln 60-62) to achieve a two-step curable property (heat curing and energy ray curing) with exposure to an active energy ray.

i. Takao teaches an image transfer medium in which a thermoplastic resin with a functional group and an isocyanate or chelate compound are used (abstract). Takao teaches the reaction of a hydroxyl functional group with either an isocyanate or chelate compound for crosslinking (col 5 ln 55 – col 6 ln 10, col 7 ln 10-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use chelate compounds in place of isocyanate in

the process of Nakamura as taught by Takao as the equivalence of the compounds presents a reasonable expectation of success and would have been obvious to one of ordinary skill in the art through routine experimentation.

j. With regards to claim 12, Nakamura teaches that the glycidyl methacrylate based polymer may be a homopolymer of glycidyl methacrylate or a copolymer of glycidyl methacrylate (col 3 ln 53-56).

k. With regards to claim 13, Nakamura teaches a transfer material comprising a protective layer formed from the material of claim 11 on a releasable base sheet (col 5 ln 45-60).

l. With regards to claim 14, Nakamura teaches the inclusion of an image layer and adhesive layer on the protective layer (Fig. 1).

m. With regards to claim 15, Nakamura teaches a method for producing a molded article comprising the steps of (col 3 ln 62-64, col 4 ln 14-23).

viii. Adhering transfer material onto a substrate of a molded article (col 3 ln 64-67);

ix. Releasing the substrate sheet (removing the releasable base sheet) (col 4 ln 1)

x. Irradiating with an active energy ray (irradiating the surface of the molded article with an active energy ray) (col 4 ln 2).

n. With regards to claim 16, Nakamura et al. teaches a method of producing a molded article comprising the steps of (col 4 ln 3-6)

xi. Placing a transfer material in a mold (applying a transfer material to the inside of a mold) (col 4 ln 7-8).

xii. Injecting a resin into a cavity for filling, molding, and simultaneously adhering the transfer material to the surface of the molded resin (filling a cavity of the mold with a resin by injection to thereby form a molded article and adhering the transfer material to a surface of the molded article) (col 4 ln 8-11);

xiii. Releasing the substrate sheet (removing the releasable base sheet) (col 4 ln 12)

xiv. Irradiating with an active energy ray (irradiating the surface of the molded article with an active energy ray) (col 4 ln 13).

o. With regards to claim 17, Nakamura teaches a first step in which the resin is semi-cured (slightly crosslinked), tack-free (col 8 ln 33), and not completely crosslinked (col 8 ln 10).

Response to Arguments

5. Applicant's arguments filed 01/24/2011 have been fully considered but they are not persuasive.

a. With regards to applicant's arguments with respect to the declaration, these arguments are not persuasive as discussed above.

b. With regards to applicant's argument that Nakamura does not teach a two step curing process, this argument is not persuasive. Nakamura teaches that the

heat curing agent provides an initial slightly crosslinked (col 8 ln 10, slightly cured) product for further curing by an active energy ray.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-5516. The examiner can normally be reached on Monday to Thursday 8:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GHH/

/Christina Johnson/
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